



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8, MONTANA OFFICE
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HELENA, MONTANA 59626

Ref: 8MO

March 8, 2011

Cedar-Thom Project Leader
Plains/Thompson Falls Ranger District
P.O. Box 429
Plains, Montana 59859

Re: CEQ 20110022; EPA comments on Cedar-Thom Project DEIS

Dear Cedar-Thom Project Leader:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Draft Environmental Impact Statement (DEIS) for the Lolo National Forest's Cedar-Thom Project in accordance with EPA responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

The EPA is very pleased with the many watershed restoration activities included in the Cedar-Thom project action alternatives (i.e., upsizing 10 road culverts to improve streamflow and fish passage; rehabilitating stream segments on California Gulch, Lost Creek, and Oregon Gulch that have been affected by past placer mining; removing a section of the historic Amador railroad grade encroaching on a segment of Cedar Creek that is currently eroding and at risk of failure into the creek; and planting riparian vegetation along Cedar Creek where road #320 is located near the Creek). In addition, EPA is supportive of the significant amount of road BMP improvements (67 to 86 miles), road decommissioning (112 to 118 miles), and road storage (19 miles) and common to all the action alternatives.

The DEIS does not identify a preferred alternative, however, among the current action alternatives EPA considers Alternative 4 to be environmentally preferable. Alternative 4 avoids construction of new long-term roads, includes 0.3 miles less construction of temporary roads, 6 additional miles of administrative road decommissioning, and avoids construction of the additional 1.6 miles of new ATV trail associated with creation of a 10 mile ATV loop route. These features reduce potential adverse effects associated with road construction and road use,

particularly effects associated with the 5.1 miles and 5.3 miles of new long-term road construction that is proposed with Alternatives 2 and 3, respectively. We support efforts to minimize new roads since roads are often the major anthropogenic sediment source adversely affecting hydrology, water quality, and fisheries of streams in National Forests. Roads and motorized uses also often adversely affect wildlife habitat, connectivity and security, can adversely impact air quality, and promote spread of weeds and cause other adverse ecological effects.

We are also pleased that the largest trees would be retained in all action alternatives. We note that Alternative 4 includes 526 acres more timber harvest than Alternative 3, however, Alternative 4 also includes the most extensive use of less ground disturbing timber yarding methods to reduce soil erosion (e.g., 37% of yarding via helicopter; 43% via skyline cable; 2% excaline cable; yarding units 1, 4, 8, and 13 via tractor over snow or on frozen ground), and avoids timber harvest within old growth units. Alternative 4 includes some timber harvest within the Sheep Mountain-Stateline Inventoried Roadless Area (IRA), but the DEIS states that all but 183 acres of the 1,118 acres of Alternative 4 timber harvest proposed in the IRA are in areas that have already been substantially altered, and proposed harvests would not affect the already altered natural and undeveloped characteristics of the IRA (page 2-30). The other 183 acres of IRA harvest would be adjacent to private land in the WUI and would reduce fuels and fire risks near private residences, and would be helicopter harvested.

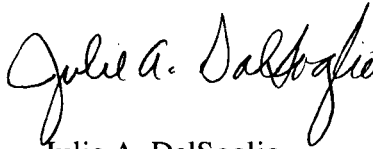
While we consider Alternative 4 to be environmentally preferable among the current action alternatives, we also support conduct of vegetation management activities that restore vegetative conditions and improve forest resilience to fire, insects and disease, reduce fire risks, and promote more natural and sustainable forest structure, and restore and improve wildlife habitat, in addition to restoring watershed health. Land management decisions involve environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, restoration of vegetative conditions, fire risk and fuels, forest health, wildlife, water quality and fisheries, air quality, weed spread, old growth, and other resource impacts). We generally consider it appropriate to consider the many environmental and resource management trade-offs, while minimizing adverse environmental impacts, addressing project purpose and need and significant issues, in an overall effort to optimize the trade-offs.

The Lolo NF, therefore, may want to consider development of a modified preferred alternative to optimize the environmental and resource management trade-offs, while minimizing environmental impacts, and addressing project purpose and need and the significant issues. Additional alternative evaluation in the FEIS may also better explain to the public the trade-offs involved in making land management decisions, and may lead to improved public acceptance of decisions. We have identified desirable features we consider worthy of including in a modified preferred alternative in our more detailed comments (enclosed). We note of course that the Forest Service would need to evaluate and analyze the impacts of any new modified alternative that is developed, and display those impacts in the FEIS.

The EPA's further discussion and more detailed questions, comments, and/or concerns regarding the analysis, documentation, or potential environmental impacts of the Cedar-Thom Project DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information) due to potential for some adverse effects to water quality and road sediment effects from proposed management activities should Alternative 2 or 3 be selected. EPA does not have objections to Alternative 4 although there may be opportunities for application of additional mitigation measures to minimize environmental effects with Alternative 4. A copy of EPA's rating criteria is attached. We recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions.

The EPA appreciates the opportunity to review and comment on the DEIS. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Helena at 406-457-5022 or in Missoula at 406-329-3313 or via e-mail at potts.stephen@epa.gov. Thank you for your consideration.

Sincerely,



Julie A. DalSoglio
Director
Montana Office

Enclosures

cc: Larry Svoboda/Connie Collins, EPA 8EPR-N, Denver
Dean Yashan/Robert Ray/Mark Kelley, MDEQ, Helena

EPA COMMENTS ON THE CEDAR-THOM PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

Brief Project Overview:

The Lolo National Forest (LNF) developed the Cedar-Thom DEIS to evaluate integrated landscape level restoration activities proposed on National Forest lands southwest of the Town of Superior, in Mineral County, Montana. The project area of approximately 58,334 acres is located in the drainages of Cedar and Thompson Creek that flow from the Montana-Idaho border to the Clark Fork River. Approximately 90 percent of the project area is National Forest System land with the remaining lands privately owned. The project purposes are to:

- 1) Restore vegetative conditions to increase resistance to undesirable effects of fires, insects, disease, and drought; resiliency to those natural disturbances; and sustain future composition, structure, species, and genetic diversity.
- 2) Reduce forest fuels in wildland urban interface (WUI) and non-WUI areas, and reestablish fire as a disturbance process on the landscape.
- 3) Improve and maintain big game winter range
- 4) Enhance watershed health.
- 5) Enhance recreation opportunities and establish travel management designations consistent with land management objectives.

The project was developed in collaboration with a diverse public group who worked with the Forest Service to identify restoration opportunities focusing on the five resource areas identified above. Four alternatives (including no action) were analyzed in response to public issues of: effects to water quality and fisheries; inventoried roadless area; old growth and wildlife security. Alternative 1 was the No Action alternative, where no new activities would be conducted at this time, although ongoing forest management activities would continue.

Alternative 2 is the modified proposed action that includes mechanical treatments to restore vegetative species composition and resilience on approximately 6808 acres, including 4522 acres of timber harvest, and 2286 acres of treatments where smaller trees would be left on the ground to decompose or be pile burned. Prescribed burning would be applied to approximately 10,733 acres to improve big game winter range and resilience of vegetative communities, reduce fuels, and reintroduce fire. This alternative also includes aquatic restoration activities (culvert replacements, stream rehabilitation, and riparian planting); 112 miles of road decommissioning (70 miles administrative), 19 miles of road storage; weed treatments along roadways; and recreation enhancements. Approximately 2.4 miles of new temporary roads and 5.7 miles of long-term roads would be constructed. Approximately 86 miles of existing roads would be maintained for timber access and removal. A 10 mile community ATV trail with 1.6 miles of

new trail to form a loop route would be created.

Alternative 3 modifies Alternative 2 in response to social issues regarding activities in Inventoried Roadless Areas and concerns about potential effects to roadless character. Most differences from Alternative 2 involve the deletion of timber harvest from within Inventoried Roadless Areas. This alternative includes mechanical treatments on approximately 5701 acres, including 3188 acres of timber harvest, and 2513 acres of treatments where smaller trees would be left on the ground to decompose or be pile burned. Prescribed burning would be applied to approximately 11,771 acres. This alternative also includes aquatic restoration activities (culvert replacements, stream rehabilitation, and riparian planting); 112 miles of road decommissioning (70 miles administrative), 19 miles of road storage; weed treatments along roadways; and recreation enhancements. Approximately 2.4 miles of new temporary roads and 5.9 miles of long-term roads would be constructed. Approximately 67 miles of existing roads would be maintained for timber access and removal, and the same 10 mile community ATV trail as in Alternative 2 with would be created.

Alternative 4 modifies Alternative 2 in response to environmental concerns about potential effects to water quality, wildlife security, old growth forests and old growth associated wildlife species. Most differences from Alternative 2 involve the deletion of timber harvest within existing old growth stands, long-term specified road construction, and ATV route development. This alternative includes mechanical treatments on approximately 6119 acres, including 3724 acres of timber harvest, and 2395 acres of treatments where smaller trees would be left on the ground to decompose or be pile burned. Prescribed burning would be applied to approximately 10,733 acres. This alternative also includes aquatic restoration activities (culvert replacements, stream rehabilitation, and riparian planting); 118 miles of road decommissioning (76 miles administrative), 19 miles of road storage; weed treatments along roadways; and recreation enhancements. Approximately 2.1 miles of new temporary roads and no long-term roads would be constructed. Approximately 79 miles of existing roads would be maintained for timber access and removal, and the 10 mile community ATV trail would not be created. The DEIS did not identify a Preferred Alternative.

Comments:

1. We appreciate the inclusion of clear narrative discussions describing alternatives in the DEIS, including information on project design features; activities common to the action alternatives; tables summarizing feature of alternatives; disclosure of resource protection measures and monitoring measures; discussion of alternatives considered but dismissed; and the several tables (Tables 2.5 to 2.9) comparing alternatives. We also appreciate inclusion of the clear color foldout maps of action alternatives in Appendix A, and descriptions of treatment units and BMPs in Appendices B and C. The DEIS narrative, tables, maps, and appendices facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

2. As discussed in our transmittal letter, EPA considers Alternative 4 to be environmentally preferable among the current action alternatives. However, we also recognize that land management decisions involve environmental and resource management trade-offs (i.e., trade-offs in impacts among vegetation treatments, restoration of vegetative conditions, fire risk and fuels, forest health, wildlife, water quality and fisheries, air quality, weed spread, old growth, and other resource impacts). We generally consider it appropriate to evaluate the many environmental and resource management trade-offs, and make an effort to optimize the trade-offs while minimizing adverse environmental impacts and addressing project purpose and need and significant issues. The Lolo NF, therefore, may want to consider development of a modified preferred alternative in an effort to optimize the environmental and resource management trade-offs. Desirable features we consider worthy of including in a modified preferred alternative are as follows:

- ▶ minimize new road construction and reconstruction, especially long-term or permanent new roads, and locate necessary new roads on uplands away from streams where they have minimal aquatic impacts, and avoid road construction on erosive soils;
- ▶ maximize improvements to road BMPs, road drainage, and sediment/erosion control, address road failures, replace undersized culverts and culverts that block fish passage (except where such blockage is desired to protect native fish populations);
- ▶ maximizing decommissioning of roads and removal of road stream crossings to reduce existing road densities, while allowing for necessary management and reasonable public access, since improved watershed conditions, fisheries, and wildlife habitat and security are associated with reduced road densities;
- ▶ maximize fish and watershed improvement (i.e., rehabilitation of placer mined streams, reducing stream encroachments, stabilizing eroding streambanks, improving aquatic habitat, revegetating disturbed areas);
- ▶ plan, design and implement vegetative treatments to minimize erosion and sediment transport and excessive water yield;
- ▶ reduce fuel loadings in high fire risk areas, particularly urban interface areas, while improving wildlife habitat, connectivity and security, retaining large healthy trees of desirable species and/or species in decline (Ponderosa pine, whitebark pine, western larch, aspen), and promoting more natural and sustainable forest structure, and protecting other resource values (e.g., soil productivity, old growth, control of noxious weeds, options for future wilderness consideration);

- provide a Forest road and trail system that allows adequate access for management, avoids erosion & transport of sediment to streams, spread of noxious weeds, degradation of habitat in wetlands and other environmentally sensitive areas; and provides opportunities for public recreation and adequately balances motorized and non-motorized recreation opportunities.

Water Resources/Hydrology/Fisheries

3. We are pleased that the DEIS discloses the water quality impairment status of Cedar Creek, and recognizes that the project area is within the water quality restoration and Total Maximum Daily Load (TMDL) planning area for the Middle Clark Fork Tributaries (pages 3-79, 3-84). The MDEQ's Clean Water Act website lists Cedar Creek (17.3 miles from the headwaters to its confluence with the Clark Fork River, segment MT76M002_020) as water quality impaired under Section 303(d) of the Clean Water Act (<http://cwaic.mt.gov/query.aspx>). Cedar Creek only provides partial support for aquatic life, cold water fishery, industrial and drinking water uses. Probable causes of water quality impairment are listed as low flow alterations, nitrite/nitrate nitrogen (NO₂ + -N), and total kjeldahl nitrogen (TKN). Probable sources of water quality impairment are listed as flow alterations from water diversions and unknown sources. A TMDL will be needed to address these impairments (Middle Clark Fork Tributaries TMDL Planning Area).

We are pleased that many measures are identified for protection of aquatic and soil resources (pages 2-13 to 2-18). We particularly support the proposed use of Inland Native Fish Strategy (INFISH) Riparian Habitat Conservation Areas (RHCAs, page 3-93), including flagging of riparian and wetland buffer boundaries on the ground so that contractors may avoid equipment operation within these sensitive areas.

We also appreciate the many watershed restoration activities included in all the Cedar-Thom Project action alternatives (i.e., upsizing 10 road culverts to improve streamflow and fish passage; rehabilitating stream segments on California Gulch, Lost Creek, and Oregon Gulch that have been affected by past placer mining; removing a section of the historic Amador railroad grade encroaching on Cedar Creek in a segment that is currently eroding and at risk of failure into the creek; and the planting riparian vegetation along Cedar Creek where road #320 is located near the Creek). In addition, EPA is supportive of the significant amount of road decommissioning (112 to 118 miles), road storage (19 miles), and road BMP improvements (67 to 86 miles) common to all the action alternatives.

EPA fully supports road BMP improvements and road maintenance, since such measures reduce erosion and improve water quality (e.g., removing and replacing undersized culverts, installing drainage dips or surface water deflectors, armoring drainage structures, grading and replacement of aggregate to reinforce wet surface areas, ditch

construction and cleaning). We also fully support decommissioning of roads, since many roads often cannot be properly maintained resulting in road sediment transport to streams. Reductions in road density, especially road stream crossing density, has often been correlated with improved aquatic health. We encourage closure/decommissioning of roads near streams with many stream crossings, since removal of these roads are more likely to have water quality benefits than closure and decommissioning of roads on upper slopes and ridges.

We also note that lower road densities are often associated with improved wildlife habitat, connectivity and security. In addition, there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues such as the Cedar-Thom project area.

It appears to us that the proposed Cedar-Thom Project would be consistent with development of TMDLs to improve water quality in Cedar Creek and restore full support of beneficial uses (i.e., the project is not likely to measurably affect flows or nitrogen levels in Cedar Creek, and would be consistent with restoration of full support of beneficial uses). However, we recommend that the Lolo NF consult with Montana DEQ TMDL program staff to assure that the MDEQ also considers the proposed Cedar-Thom management actions to be consistent with development of TMDLs, water quality improvement and restoration of support for beneficial uses in Cedar Creek (contact MDEQ staff such as Mr. Mark Kelley at 406-444-3508, Mr. Dean Yashan at 406-444-5317, and/or Mr. Robert Ray at 406-444-5319). We also encourage review of the MDEQ's pamphlet, "***Understanding the Montana TMDL Process.***" <http://deq.mt.gov/wqinfo/TMDL/default.mcpix> .

4. We are pleased that the WEPP model (Water Erosion Prediction Project) has been used to model sediment delivery, and that this model predicts little probability of sediment delivery to surface waters from road construction, timber harvests, non-commercial mechanical treatments and prescribed burning activities (page 3-87). We note that sediment modeling shows that Alternative 4 would have the smallest short-term sediment increases during project implementation among action alternatives, and the largest long-term sediment reduction in Cedar Creek, although the differences in sediment effects among action alternatives is small (page 3-88).

The sediment impact analysis indicates that sediment effects would likely be greatest from the proposed construction of 5.1 and 5.3 miles of long-term road with Alternatives 2 and 3, respectively, although only two of the proposed new road segments would cross a stream drainage (page 3-88). The analysis also notes a modest potential for sediment increases during log hauling where roads cross streams or are close to streams (page 3-89).

As stated in our transmittal letter, EPA considers Alternative 4 to be environmentally preferable among the current action alternatives, since Alternative 4 avoids construction of new long-term roads, includes 0.3 miles less construction of temporary roads, 6 additional miles of administrative road decommissioning, and avoids construction of the additional 1.6 miles of new ATV trail associated with creation of a 10 mile ATV loop route. These features reduce potential adverse effects associated with road construction and road use, particularly effects associated with the 5.1 miles and 5.3 miles of new long-term road construction proposed with Alternatives 2 and 3, respectively.

5. For your information our general recommendations regarding road planning, design, construction, and maintenance to minimize water quality effects of roads are as follows:

- * minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
- * locate roads in upland locations away from streams and riparian areas as much as possible;
- * locate roads away from steep slopes or erosive soils;
- * minimize the number of road stream crossings;
- * stabilize cut and fill slopes;
- * provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
- * consider road effects on stream structure and seasonal and spawning habitats;
- * allow for adequate large woody debris recruitment to streams and riparian buffers near streams;
- * properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout;
- * replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration;
- * use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where

needed to minimize adverse fisheries effects of road stream crossings.

We also encourage conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources in the watersheds in the project area that may cause or contribute to sediment delivery and stream impairment, and to include activities in the project to correct as many of these conditions and sources as possible.

Blading of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring breakup conditions should also be avoided. We encourage closing roads to log haul during spring break up to reduce rutting of roads that increase road erosion and sediment delivery, and graveling of haul roads. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads).

Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

Training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way"-how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

6. We are also pleased that water yield modeling was carried out and that the proposed road construction, timber harvests, non-commercial mechanical treatments and prescribed burning activities are not expected to have measureable effects on water yield in the Cedar-Thom project area (page 3-90). The DEIS states that Alternative 2 would result in the highest water yield increase, a doubling of modeled water yield, but this increase

would still be well below equivalent clearcut acres (ECA) thresholds causing runoff increases that could affect stream channel stability.

7. The DEIS acknowledges that activities that could involve disturbance to streams (e.g., culvert replacements, streambank stabilization, aquatic habitat improvements, etc.) will require Montana Stream Protection Act permits (124 permits) and/or Clean Water Act Section 404 permits (page 2-15). We encourage the LNF to contact Mr. Todd Tillinger of the U.S. Army Corps of Engineers, Montana Office in Helena at 406-441-1375 or Ms. Christina Schroeder of the Corps of Engineers, Missoula Office at 406-541-4845 extension 328, to determine applicability of 404 permit requirements to proposed construction activities in or near streams or wetlands.

We note that if a 404 permit(s) is eventually required to implement aspects of the proposed project that involve disturbances to streams and wetlands there would also be a need to obtain appropriate water quality standards certification from the Montana DEQ in accordance with Section 401 of the Clean Water Act. We encourage contact with Mr. Jeff Ryan of the Montana DEQ at 406-444-4626 in regard to 401 certification. A short term turbidity exemption is generally also required from the State when operating heavy equipment in waters of the State (e.g., 318 authorization). To ease the administrative burden the Federal and State agencies have developed a single permit application for the various potential permits or authorizations that may be needed

(<http://dnrc.mt.gov/permits/default.asp> ,

http://dnrc.mt.gov/permits/streampermitting/joint_application.asp). Also a Montana Stream Permitting Guide is available to explain the various permitting authorities

<http://dnrc.mt.gov/permits/streampermitting/guide.asp>.

8. The DEIS states that the Thompson Falls Dam located approximately 75 miles downstream, eliminated fish migration and spawning access for Lake Pend Oreille to 86 percent of the Clark Fork River basin (page 3-95), and limited the migratory form of bull trout and westslope cutthroat trout in the Cedar Creek watershed.

For your information a new fish ladder was recently constructed at Thompson Falls Dam by PPL Montana to provide fish passage at the dam. This fish ladder should improve opportunities for bull trout and westslope cutthroat trout to access Cedar Creek (see page 2 of *Montana Currents* Fall 2010 newsletter issue,

<http://www.pplmontana.com/community/our+community/montana+currents+newsletter.htm>).

Wetlands and Riparian Areas

9. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order

11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base.

It is important that wetlands and riparian areas be properly managed to maintain and restore the health of watersheds and aquatic resources to sustain aquatic and terrestrial species and provide water of sufficient quality and quantity to support beneficial uses. Adequate riparian vegetation in stream-side areas must be maintained to stabilize streambanks and stream channels during floods and other periodic high flow events.

Riparian Habitat Conservation Areas (RHCAs) are an important management element in the Interior Columbia Basin (ICB) Strategy to maintain and restore the health of watersheds, riparian, and aquatic resources to sustain aquatic and terrestrial species and provide water of sufficient quality and quantity to support beneficial uses (see <http://www.icbemp.gov/html/icbstrat.pdf> ; and "A Framework for Incorporating the Aquatic and Riparian Habitat Component of the Interior Columbia Basin Strategy into BLM and Forest Service Plan Revisions," <http://www.icbemp.gov/html/aqripfrm7804.pdf>. It is important that proposed activities be consistent with the riparian management objectives described in the ICB Strategy, which include:

- * Achieve physical integrity of aquatic ecosystems;
- * Provide an amount and distribution of woody debris sufficient to sustain physical and biological complexity;
- * Provide adequate summer and winter thermal regulation;
- * Provide appropriate amounts and distributions of source habitats for riparian- or wetland-dependent species; and
- * Restore or maintain water quality and hydrologic processes.
- * Restore or maintain naturally functioning riparian vegetation communities.

The DEIS did not identify specific wetland areas within the Cedar-Thom area, but we are very pleased that INFISH RHCA buffers would be used to protect wetlands and riparian areas. We fully support the proposed use of RHCA buffers, including a 150 foot buffer for wetlands greater than 1 acre and 100 foot buffer for wetlands under 1 acre during the Cedar-Thom project (pages 2-13, 3-93). We encourage review of harvest units in the field to determine the presence of wetlands and identification of those wetlands on the Sale Area Map and flagging of wetlands on the ground so that timber contractors will be able to avoid them.

Soils

10. We are pleased that field surveys were conducted to assess existing soil conditions within proposed vegetation treatment units, and that a soil prescription was completed in

coordination with the project silviculturist, fuels specialist, and harvest planner (page 3-114). The DEIS predicts that all harvest units would meet Region 1 soil quality standards (page 3-123).

The DEIS also indicates that the project area includes some landtypes with high surface erosion hazards (e.g., landtypes 10UA, 13UA, 13UB, 15JA, 15JB, 43QB), and landtype 61MD with a very high surface erosion hazard. It is not clear, however, if proposed timber harvests and/or road construction activities are proposed on the landtypes with high and very high erosion hazards. We recommend that the FEIS clarify if any of the proposed ground disturbing activities (e.g., road construction and timber harvests, particularly dry tractor harvests) would occur on landtypes with high or very high surface erosion hazards. We generally recommend avoidance of timber harvest and road construction in areas with high risk of sediment production or erosion potential and/or areas highly susceptible to mass failure.

We are pleased with the proposed extensive use of less ground disturbing timber yarding methods to reduce soil erosion in Alternative 4 (e.g., 37% of yarding via helicopter; 43% via skyline cable; 2% excaline cable; yarding units 1, 4, 8, and 13 via tractor over snow or on frozen ground, pages 2-16, 2-24). We note that Alternatives 2 and 3 also include use of less ground disturbing logging methods, although not as many as Alternative 4 (e.g., Alternative 3 includes 23% of yarding via helicopter; 53% via skyline cable; Alternative 2 includes 20% of yarding via helicopter; 54% via skyline cable; 4% excaline cable; and both Alternatives 2 and 3 include yarding units 1, 4, 8, and 13 via tractor over snow or on frozen ground).

We are also pleased that BMPs would be used to protect soils and reduce erosion during and after harvests (page 2-13 to 2-18). We fully support such use of erosion control practices. We often suggest mitigation measures such as use of existing skid trails wherever possible; restrictions on skidding with tracked machinery in sensitive areas; using slash mats to protect soils; constructing water bars; creating brush sediment traps; adding slash to skid trail surfaces after recontouring and ripping; seeding/planting of forbs, grasses or shrubs to reduce soil erosion and hasten recovery; as well as recontouring, slashing and seeding of temporary roads and log landing areas following use to reduce erosion and adverse impacts to soils.

11. While it is stated that soils are monitored annually on a variety of sites across the Forest to ensure that project design and soil operating procedures are implemented and effective (page 2-19), it is not clear if any of the Cedar-Thom harvest units would actually be monitored post-harvest to verify or document compliance with the Region 1 soil quality standards. We recommend at least some minimal amount of field soil monitoring following harvests using the most recent version of the Region 1 Soil Quality Disturbance Monitoring Protocol to verify compliance with the Region 1 soil quality standards of not exceeding 15% cumulative detrimental disturbance. We suggest dry

tractor harvest units on landtypes with more sensitive soils as potential candidates for post-harvest soil monitoring.

12. We are pleased that coarse woody debris would be retained to maintain long-term soil productivity and wildlife habitat (i.e., 3-6 tons per acres where thinning treatments and prescribed burning would be applied; 5-12 tons per acre in warm dry forest habitat types; 12-20 tons/acres on moister site where harvest that would result in an open forest and stand-replacement portions of mixed-severity prescribed burns; and 6 to 10 tons per acres for intermediate harvests, page 2-16). It is important that adequate amounts of woody debris be retained on-site following vegetative treatments to maintain soil productivity.

Monitoring

13. We consider monitoring to be an integral part of land management. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of actual impacts, so that adverse impacts may be identified and appropriately mitigated. Monitoring also allows verification and documentation of environmental effects predicted during NEPA evaluation.

EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, BMPs need to be revised, and impacts mitigated. We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness and long-term water quality improvements associated with road BMP work and road decommissioning.

The DEIS discusses proposed project monitoring (pages 2-18 to 2-20), including monitoring of effectiveness of BMP and RHCA buffer implementation to ensure protection of water quality. In addition culvert replacements and stream rehabilitation activities would be monitored, and if needed, corrective measures would be applied.

We generally recommend that some aquatic monitoring be included in projects, using aquatic monitoring parameters such as channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc.. Biological monitoring can be particularly helpful, since

monitoring of the aquatic biological community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

However, we also recognize that there are limited resources for monitoring, and that the Cedar-Thom project includes many watershed rehabilitation actions that would improve water quality. If at all possible, however, we encourage conduct of some aquatic monitoring to document and measure water quality impacts of proposed activities, including water quality improvements. We encourage adequate monitoring budgets for conduct of monitoring to document BMP effectiveness and effects of road construction and timber harvests.

We note that there may be PACFISH/INFISH Biological Opinion (PIBO) monitoring sites in the project area that could be used to help evaluate actual project effects (<http://www.fs.fed.us/biology/fishecology/emp/index.html>). If there are PIBO monitoring sites in the area, perhaps they may be considered for their potential to evaluate project effects.

Air Quality

14. The Cedar-Thom Project action alternatives include prescribed burning using a combination of low severity “ecosystem maintenance burning” (EMB), mixed severity prescribed fire, slashing and piling, and harvest treatments. Prescribed burning is proposed on 10,733 acres both with Alternative 2 and Alternative 4, and burning is proposed on 11,771 acres with Alternative 3 (Table 2-2, page 2-11). The DEIS states that approximately 500 acres can be burned in a day, so that prescribed burning treatments would be accomplished over multiple days and several years when there are favorable conditions (page 3-74).

The EPA supports judicious and well planned use of prescribed fire to reduce hazardous fuels and restore fire to forest ecosystems, and we recognize and support the national goal reduce the risk of uncontrolled wildfire in wildland-urban interface areas. Although as is well known, smoke from fire contains air pollutants, including tiny particulates (PM_{10} and $PM_{2.5}$) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. PM_{10} and $PM_{2.5}$ particles are both of concern, although $PM_{2.5}$ is greater concern because it can penetrate into the lungs whereas larger particles (included in the coarse fraction of PM_{10}) deposit in the upper respiratory tract. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns.

In addition to health-based standards to protect ambient air quality, the Clean Air Act requires special protection of visibility in the nation’s large National Parks and Wilderness Areas (identified as mandatory Class I Federal areas) and establishes a

national goal for “the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from man-made air pollution.” EPA’s Clean Air Act implementing regulations require states to submit State Implementation Plans that, among other things, demonstrate attainment of the National Ambient Air Quality Standards (NAAQS), as well as reasonable progress toward the national visibility goal. Actions by Federal Land Managers that lack adequate mitigation of air quality impacts could impede a state’s ability to meet Clean Air Act requirements. It is important that Cedar-Thom Project activities, when combined with air quality impacts from external sources, do not adversely impact the NAAQS or air quality related values (AQRVs) such as visibility.

The DEIS indicates that there is no specific information available concerning existing air quality in the project area, and that the nearest particulate data is from the MDEQ monitoring station at Thompson Falls High School (Table 3.4-2, page 3-73). The nearest populated area to the Cedar-Thom project is the town of Superior, Montana (population 893 as of the 2000 Census), which is approximately 0.5 miles northeast of the closest project area boundary (the majority of the burn units are over two miles from Superior). Interstate 90 also runs past Superior approximately 0.5 miles from the closest project boundary. There are several individual residences located within drainages adjacent to projected burn units. The majority of the proposed prescribed burn units are located 0.5 miles or greater from the nearest residence.

There are several communities located within 50 miles of the project area, including the cities of Thompson Falls and Missoula that are classified as nonattainment for PM₁₀. Thompson Falls is located approximately 32 miles northwest of the project area, and Missoula is located approximately 33 miles southeast of the project area (page 3-73, 3-74). Prevailing winds are stated to disperse smoke to the northeast (toward the Town of Superior). The Class I airsheds Flathead Indian Reservation and Selway-Bitterroot Wilderness Area are located approximately 19 miles to the northeast of the project area, and 48 miles south-southeast of the project area, respectively.

Since prevailing winds tend to disperse smoke to the northeast it appears that the residents in or near the town of Superior and Interstate 90 are most likely to be temporarily affected by smoke. The DEIS states that the effects of burning activities were evaluated using the procedures in the Forest Service Region 1 Smoke NEPA Guidance, http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5202219.pdf , and the Smoke Impact Spreadsheet (SIS) Model (page 3-72). Emissions data is obtained from the First Order Fire Effects Model (FOFEM) for broadcast burns and unplanned ignitions and the CONSUME 2.1 model for pile burns. A simplified version of the CALPUFF model is used to determine PM_{2.5} concentrations.

The DEIS air quality impact analysis indicates that residents in or near the town of Superior and Interstate 90 are most likely to be temporarily affected by smoke. Modeling

indicates that, in a worst case scenario, the distance from the burn where the projected PM_{2.5} concentration would fall below the 24-hour NAAQS PM_{2.5} standard of 35 µg/m³ would be 3.6 miles. In most cases, the distance would be less. So in a worst case scenario modeling indicates some potential that nearby residents could see impacts above the PM_{2.5} NAAQS. It is also stated that the smoke plume could drift over the Flathead Reservation Class I Airshed, but modeled concentrations at the Flathead Reservation are minimal. The Thompson Falls PM₁₀ non-attainment area Impact Zone, the Missoula PM₁₀ non-attainment area Impact Zone, and the Selway-Bitterroot Wilderness Class I airshed are not in the path of the prevailing winds, and modeling demonstrates insignificant impacts should the winds blow in their respective directions (page 3-75).

The DEIS also discloses that prescribed burning could cause some localized reduced visibility from the plume, but by burning under good to excellent ventilation conditions (as required by the MTDEQ Open Burning Permit) plumes should quickly disperse to insignificant visibility impact levels. Other prescribed burning on other federal, state, and private lands within the affected airshed that may occur at the same time as burning activities for this project would be monitored cumulatively on a daily basis and would contribute to the local Smoke Monitoring Unit's decision to approve a prescribed burn request on a given day.

We appreciate the DEIS summary of air quality protection measures (e.g., an approved Prescribed Fire Plan would be completed and adhered to for prescribed fire operations and pile burning; approval for burning must be obtained from the Montana/Idaho Airshed Group prior to ignition, and burning only during times of at least good ventilation; all fall burns must be approved by Montana Department of Environmental Quality prior to ignition; residents within the burn area would be notified prior to prescribed burning; signs would also be posted as needed along roads to warn of potential visibility impairment from smoke; prescribed burns would be actively monitored visually, and if a prescribed burn appears to be generating too much smoke, measures would be taken to shut down burning operations, pages 2-13, 3-74, 3-75).

We generally recommend that the EIS include a map showing the relative locations of Class I areas and any PM₁₀ and PM_{2.5} non-attainment areas that may be affected relative to areas of prescribed burns, and that the website for the Montana/Idaho State Airshed Group, <http://www.smokemu.org/> be displayed in the FEIS, since it may be of interest to the public. We also recommend that the FEIS contain an inventory of predicted emissions that would be associated with the prescribed fire activities.

In addition, we recommend that the FEIS include: (1) discussion of appropriate smoke monitoring techniques and mitigation to minimize effects to nearby residents downwind of prescribed burns (including meteorological conditions favorable for mitigated prescribed fire smoke and alternatives to prescribed fire such as mechanical fuel reduction methods); (2) requirements for the incorporation of the Interagency Prescribed

Fire Planning and Implementation Procedures Guide (July 2008, <http://www.nwcg.gov/pms/RxFire/rxfireguide.pdf>) into the site-specific burn plans designed for each prescribed burn conducted under this project; and (3) commitment to public notification of pending burns.

We also recommend disclosure that smoke management programs depend on favorable meteorological conditions to disperse smoke, but that despite best efforts to predict favorable conditions, the weather can change causing smoke not to disperse as intended. It is important to disclose that even though prescribed burns will be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day. We are pleased that residents within the burn area would be notified prior to the proposed Cedar-Thom project prescribed burning.

Climate Change

15. The DEIS identifies vegetative conditions that have occurred resulting in less resiliency to fires, insects, disease and drought (page 1-5), however, we did not see much discussion of the potential contribution of climate change to these vegetative conditions. Climate change research indicates that climate is changing, and that the change will accelerate, and that human greenhouse gas (GHG) emissions, primarily carbon dioxide emissions (CO₂), are the main source of accelerated climate change (United Nations Intergovernmental Panel on Climate Change (IPCC) , <http://www.ipcc.ch/>).

Forest Service guidance on how to consider climate change in project-level NEPA documents can be found at, http://www.fs.fed.us/emc/nepa/climate_change/includes/cc_nepa_guidance.pdf, and suggests EIS analysis and disclosure of the following:

- **The effect of a proposed project on climate change.** (GHG emissions and carbon cycling). Examples include: short-term GHG emissions and alteration to the carbon cycle caused by hazardous fuels reduction projects, and avoiding large GHG emissions pulses and effects to the carbon cycle by thinning overstocked stands to increase forest resilience and decrease the potential for large scale wildfire.
- **The effect of climate change on a proposed project.** Examples include: effects of expected shifts in rainfall and temperature patterns on the seed stock selection for reforestation after timber harvest and effects of changed stream hydrographs due to earlier snowmelts.

Climate change appears to be a factor driving at least some bark beetle outbreaks. Temperature influences everything in a bark beetle's life, from the number of eggs laid

by a single female beetle, to the beetles' ability to disperse to new host trees, to individuals' over-winter survival and developmental timing. Elevated temperatures associated with climate change, particularly when there are consecutive warm years, can speed up reproductive cycles and reduce cold-induced mortality. Shifts in precipitation patterns and associated drought can also influence bark beetle outbreak dynamics by weakening trees and making them more susceptible to bark beetle attacks, (<http://www.fs.fed.us/ccrc/topics/bark-beetles.shtml>). Climate change may increase stress to ponderosa pine seedlings, and affect the ability of ponderosa pine and other species to prosper through time, and may have added to stress factors leading or affecting the current bark beetle attacks.

Wildland fire frequency has increased in the west and altered fire regimes over the last twenty years due to climate change. More frequent fires are currently burning for extended periods of time (average of 5 weeks) compared to the infrequent fires lasting less than one week that were common prior to the mid-1980s. Large wildfire activity increased in the 1980s, with higher large fire frequency, longer wildfire durations, and longer wildfire seasons; with the greatest increases occurring in mid-elevation.

EPA Region 8 suggests a general four step approach to address climate change in NEPA documents that appears consistent with the Forest Service guidance.

- Briefly discuss the link between greenhouse gases (GHGs) and climate change, and the potential impacts of climate change, (see <http://www.epa.gov/climatechange/> , <http://www.fs.fed.us/ccrc/> , <http://www.ipcc.ch/>).
- Describe the capacity of the proposed action to adapt to projected climate change effects, including consideration of future needs.
- Characterize, quantify and disclose the expected annual cumulative emissions of GHGs attributable to the project, using annual CO₂-equivalent as a metric for comparing the different types of GHGs emitted. It is suggested that the project's emissions be described in the context of total GHG emissions at regional, national and global scales (over the lifetime of the project).
- Discuss potential means to mitigate project-related emissions as appropriate pursuant to CEQ regulations (40 CFR Sections 1502.14(f), 1502.16(h), 1508.14).

We did see reference made in the DEIS to the 2006 article, "*Is Global Warming Causing More, Larger Wildfires?*" (*Science* 313 (5789), pp.927-928, Running, S.W.), but did not see DEIS discussion of the role of climate change in contributing to changed vegetative conditions in the Cedar-Thom area. We recommend that the Lolo NF consider the climate change considerations discussed above, and include in the FEIS a summary of how the proposed project will address such considerations. For example, including a summary of how warming and drought due to climate change may be influencing vegetative conditions and forest health.

We encourage such discussion in NEPA documents since it contributes to improved public understanding of the effects of climate change on forest ecosystems and forest management, particularly the effects hotter and drier conditions in stressing trees, increasing the frequency of bark beetle outbreaks, and allowing bark beetles to move northward or higher in elevation and into other ranges of their hosts or the ranges of new potential hosts.

Forest Vegetation

16. The DEIS Chapter 3 discussion of forest vegetation provides valuable information regarding forest structure and composition, disturbance, insects and pathogens, fire regimes, fuels and fire risks. EPA supports vegetative treatments to reduce fire risks, susceptibility to insect and disease agents, improving forest structural diversity and ecological integrity. We also support the need to restore fire as a natural disturbance process, and to help address competing and unwanted vegetation and fuel loads and fire risk and forest health.

We generally favor understory thinning from below, slashing and prescribed fire to address fuels build-up with reduced ecological impacts. We also favor retention of the larger more vigorous trees, particularly trees of desirable tree species whose overall composition may be in decline (e.g., Ponderosa pine, aspen, whitebark pine). The larger trees are generally long-lived and fire resistant, and provide important wildlife habitat. Harvest of many live mature trees could potentially increase fire risk, as well as reduce wildlife habitat. If the forest canopy is opened too much by removal of large fire resistant trees it may promote more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the fire risk reduction purpose and need.

We are pleased that the design features for the Cedar-Thom project state that the largest trees would be retained and that old, large and/or fire scarred trees would be retained (page 2-1).

17. EPA supports protection of old growth habitats and maintenance or restoration of native, late-seral overstory trees and forest composition and structure within ranges of historic natural variability. Old growth stands are ecologically diverse and provide good breeding and feeding habitat for many bird and animal species, which have a preference or dependence on old growth (e.g., barred owl, great gray owl, pileated woodpecker). Much old growth habitat has already been lost, and it is important to prevent continued loss of old growth habitat and promote long-term sustainability of old growth stands, and restore where possible the geographic extent and connectivity of old growth (e.g., using passive and active management-such as avoiding harvest of old growth trees, leaving healthy larger and older seral species trees, thinning and underburning to reduce fuel loads and ladder fuels in old growth while enhancing old growth characteristics). Often lands

outside the forest boundary have not been managed for the late-seral or old growth component, so National Forest lands may need to contribute more to the late-seral component to compensate for the loss of this component on other land ownerships within an ecoregion.

We are pleased that the Cedar-Thom Project design features indicate that vegetation treatments in all action alternatives would retain old growth characteristics (page 2-1). We understand that Alternative 4 only includes hand slashing of trees in old growth areas to reduce the likelihood of high-severity wildfire, and increase the vigor of old trees (page S-18), whereas Alternatives 2 and 3 include mechanical timber harvest

For your information, EPA does not oppose treatments in old growth such as thinning of understory or under burning to reduce fuel loads and ladder fuels in old growth, since such treatments may lessen the threat of stand removal by a wildfire and reduce competition with other vegetation to promote larger diameter trees. Careful prescribed burning in old growth stands can reduce fuel loads and fire risk in such stands, and thus, may promote long-term protection and sustainability of old growth stands.

Noxious Weeds

18. Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as road building, logging, livestock grazing or fire activities. We are pleased that the Lolo NF has a combined program of mechanical, biological, and chemical weed control, along with an education program for weed prevention and management in cooperation with the Mineral County Weed Board (page 3-48). EPA supports integrated weed management, and we encourage use of weed control measures at the earliest stage of invasion to reduce impacts to native plant communities.

We are also pleased that the Lolo NF recognizes that weed prevention is the most cost-effective way to manage and control weeds by avoiding new infestations and spread of weeds, and thus, avoiding the need for subsequent weed treatments (page 3-49). We also encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database.

We are pleased that the proposed Cedar Thom project includes activities to control and manage spread of weeds (pages 2-15, 2-16), and the DEIS includes a section addressing weed management (page 3-46 to 3-51). The weed management measures identified in the DEIS evidence that the Lolo NF recognizes the potential adverse effects of herbicide use on water quality and fisheries. Some suggestions to reduce potential water quality and fisheries effects from herbicide spraying that we didn't see listed among these weed management measures are: 1) streams and wetlands in any area to be sprayed be

identified and flagged on the ground to assure that herbicide applicators are aware of the location of wetlands, and thus, can avoid spraying in or near wetlands; 2) use treatment methods that target individual noxious weed plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water). We also recommend that use of picloram based herbicides (e.g., tordon) be avoided near aquatic areas, and that potentially toxic herbicides be applied at the lowest rate effective in meeting weed control objectives and according to guidelines for protecting public health and the environment.

We note that Montana's Water Quality Standards include a general narrative standard requiring surface waters to *be free from substances that create concentrations which are toxic or harmful to aquatic life*. Herbicide drift into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetland species. We also recommend that weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected.

Please also note that there may be additional pesticide use limitations that set forth geographically specific requirements for the protection of endangered or threatened species and their designated critical habitat. This information can be found at <http://www.epa.gov/espp/bulletins.htm> . You may also want to consider use of a more selective herbicide (clopyralid) for use in conifer associated communities to reduce impacts on non-target vegetation. We also note that spotted knapweed, which is a prevalent noxious weed species in western Montana, is non-rhizomatous and should be relatively easy to control with lower rates of the most selective low toxicity herbicides.

For your information, the website for EPA information regarding pesticides and herbicides is <http://www.epa.gov/pesticides/> . The National Pesticide Telecommunication Network (NPTN) website at <http://nptn.orst.edu/tech.htm> which operates under a cooperative agreement with EPA and Oregon State University and has a wealth of information on toxicity, mobility, environmental fate on pesticides that may be helpful (phone number 800-858-7378).

19. Weed seeds are often transported by wind and water, animal fur, feathers and feces, but primarily by people. The greatest vector for spread of weeds is through motorized vehicles-cars, trucks, ATVs, motorcycles, and even snowmobiles. Weed seeds are often caught on the vehicle undercarriage in mud and released on the Forest. A single vehicle driven several feet through a knapweed site can acquire up to 2,000 seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service).

We believe an effective noxious weed control program should consider restrictions on motorized uses, particularly off-road uses, where necessary. We are pleased that the DEIS discusses potential for weed seed transport on the ATV trail that is proposed with Alternatives 2 and 3, and that the ATV route would be monitored and weed control measures taken as soon as feasible after weed discovery (page 3-50).

The DEIS indicates that illegal off-road ATV use is occurring in the Thompson Peak area (page 3-50). Off-road vehicles travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Restrictions on motorized uses may also be needed after burning and harvest activities until native vegetation is reestablished in the disturbed areas to reduce potential for weed infestation of the disturbed sites. Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the dispersal rate and distances along trails are less with non-motorized travel.

Wildlife

20. The DEIS indicates that some threatened and/or endangered (T&E) species may occur in the project areas such as the Canada lynx, gray wolf, and grizzly bear, although there is no documented occupancy by the threatened grizzly bear (page 3-131), and a pack of gray wolves in the areas were removed after predation on livestock (page 3-137). The DEIS states that there may be slight impacts that would not likely adversely affect the threatened Canada lynx (page 3-136), and there would be no effect to the grizzly bear and gray wolf (page 3-138). If it is found that the finally selected project alternative may adversely affect any T&E the final EIS should include the associated U.S. Fish & Wildlife Service (USFWS) Biological Opinion or formal concurrence for the following reasons:

- (a) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;
- (b) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and
- (c) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and

mitigation measures. If T&E species are subsequently identified in the project area, EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative.

21. We are pleased that large snags that have evidence of cavity nesting would be retained (pages 2-28, 3-38). The DEIS also states that there would be little impact on cavity nesting species such as the pileated woodpecker and its habitat, since large overstory trees are retained; the average tree diameter within the stand remains the same or may increase because some smaller trees are burned; additional snags may be created by burning; non-commercial thinning would not occur in stands that are considered potential pileated habitat. The DEIS concludes that timber harvest activities generally would have little impact on potential pileated woodpecker habitat, although there is some possibility that some smaller snags maybe knocked down during treatment activities but considering the extensive acreage of dead and dying trees in the Cedar-Thom project area, the loss of a few small snags would be undetectable across the project area (page 3-165).
22. We are also pleased that a no treatment buffer of a minimum of 30-40 acres would be maintained around active goshawk trees (page 21).
23. Biodiversity may be an important consideration for new projects or when special habitats (i.e., wetlands, threatened and endangered species habitat) will be affected. The state of the art for this issue is changing rapidly. We recommend that potential project impacts on biodiversity be at least briefly evaluated and discussed in the NEPA document. CEQ prepared guidance entitled, "Incorporating Biodiversity Considerations Into Environmental Impact Analysis Under the National Environmental Policy Act," http://ceq.hss.doe.gov/publications/incorporating_biodiversity.html.

Roadless

24. Alternatives 2 and 3 propose 1,269 and 1,118 acres of timber harvest within the Sheep Mountain-Stateline Inventoried Roadless Area (IRA). It is stated at the top of page 3-203 that existing roads would be used to access the proposed harvest treatment areas. It is then stated in the following paragraph that tree removal would be accomplished with helicopter. This seems contradictory or inconsistent. Will tree removal in the IRA be accomplished with use of helicopters or via logging trucks on existing roads? This should be clarified in the FEIS.

The DEIS states that all but 183 acres of the 1,118 acres of Alternative 4 timber harvest proposed in the IRA would occur in areas that are already substantially altered, and proposed harvests would not affect these altered natural and undeveloped characteristics of the IRA (pages 2-30, 3-202). The 183 acres are thinning units (Units 14, 15, and 17)

adjacent to private land in the WUI that would reduce fuels and fire risks near private residences. Timber stand conditions adjacent to private land and homes are stated to be dense and likely to support stand-replacing fires (page 3-203). Proposed treatment areas would extend less than 3000 feet into the IRA and would be separated from the rest of the IRA by a topographic ridge. All harvest activities would generally remove the smaller diameter trees, with the largest trees retained, which would result in an increase in average tree diameter within the treated areas following harvest.

While proposed IRA harvest activities could temporarily reduce the sense of solitude within some portions of the IRA due to noise associated with timber sale operations and appearance of road dust during timber hauling activities, it is stated that the natural and undeveloped character is already reduced within the substantially altered portions of the roadless area, and proposed harvest treatments would not further reduce these characteristics of the existing altered areas and could help to visually soften the edges of some of the existing geometrically shaped openings, created by previous harvest. The combination of proposed treatments areas, past treatment areas, and unmanaged areas would result in a variety of tree age classes and stand density and composition on the landscape that could mimic the mosaic patterns created by wildfire, which would help to restore some of the natural quality of these previously altered areas within the IRA (page 3-203). Accordingly EPA does not have objections to thinning treatments in such areas to reduce wildfire risks to private homes and residences.

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

